

Work Order ID 63010

October 18, 2010 7:40:23 AM

PRELIMINARY ISSUE

Rev A. DL 10/10/18

Page 1

Item ID: D3980-1

Accept

Revision ID: PRELIM

Item Name: 429 Bearpaw

Start Date: 10/18/10 Start Qty: 2.00

Required Date: 10/18/10 Req'd Qty: 2.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3980

PAT A

100

0.00



HAND FINISHING THERMOFORMING

Thermoform

Memo

0.00

Thermoforming Machine

Cut Blanks to fit frame size

x4

BB 10/10/18

105

0.00



Dry Material

HandThermo

Memo

0.00

Hand Finishing Thermoforming

Dry Sheet as per QSI022 ALEXTRA

Temp: 240° F

Time IN: 7:00 PM Oct 16 (SAT)

Time OUT: 7:00 AM Oct 18 (MON)

x4

BB 10/10/18

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Page 2

Item ID: D3980-1

Accept

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Start Date: 10/18/10 Start Qty: 2.00

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Cust Item ID:

Customer:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

110



Thermoform

Thermoforming Machine

THERMOFORMING MACHINE

Memo

Thermoform as per Dwg. D3980-1 and Folio FTA078 using tool DT 9673

Dwg. Rev. A

Folio Rev. A

0.00

0.00

(X2)

X1

BB
10/10/18

PTO. →

120



QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

0.00

Memo

Visually inspect for proper formation of each part

0.00

X2

BB
10/10/18

130



QC

Quality Control

QC8- Inspect parts - second check

0.00

Memo

0.00

(X2)

OK
10/10/18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3900-1 PAR #: _____ Fault Category: Thermoforming NCR: ☒ Yes No DQA: [Signature] Date: 10/10/18
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: [Signature] Date: 10/11/18

NCR: 63010		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
10/10/18	110.	1 Part processed too cold. 1st part formed; sheet was not quite hot enough R.C. process	<u>[Signature]</u>	Keep part label as. R&D only and save for HAI. part identified	<u>Dh</u> 10/10/18	<u>[Signature]</u> 10-10-18	<u>[Signature]</u>	<u>[Signature]</u> 10-10-18

NOTE: Date & initial all entries

Work Order ID 63010

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Item ID: D3980-1

Accept



Setup Start



Revision ID: PRELIM

Item Name: 429 Bearpaw

Stop



Start Date: 10/18/10 Start Qty: 2.00



Cust Item ID:

Required Date: 10/18/10 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140



Thermoform

Thermoforming Machine

HAND FINISHING THERMOFORMING

Memo

0.00

1-Trim & Drill to Finished Dimensions as per dwg D3980-1

2- Use wearplate jig DT9673 to transfer drill holes in bearpaw as per dwg and use 0.375" unibite to open holes to finish size.

3- Chamfer all holes on both sides using appropriate 0-flute countersink bit.

(x2)

OK
10/10/10

BB
10/10/10

145



HandThermo

Hand Finishing Thermoforming

Anneal Material

Memo

0.00

Anneal trimmed & drilled product at 250 deg. F. for 75 minutes & allow to cool in oven.

Time In: 12:45 PM OK

Oven Off: 2:00 PM BB

BB
10/10/10

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Setup Start

Stop

Start Date: 10/18/10 Start Qty: 2.00

Required Date: 10/18/10 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

150

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

Check dimensions to ensure conformity to drawing tolerances.

2

B
10/18/10

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

2

①

10/10/10

170

Identify as per dwg & Stock Location: _____

0.00



Packaging

Memo

0.00

Packaging

N/A

Work Order ID 63010

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Required Date: 10/18/10 Req'd Qty: 2.00

Reference:

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run

Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

180

QC21- Final Inspection - Work Order Release

0.00

QC

Memo

0.00

Quality Control

Rev. A
TEST
10/11/15

SEE W/O 63011.
THATS WERE
FLIGHT TESTED
AND RETURNED TO
DAS ENG.

10.11.12

MF
10-11-15

POSITIVE RECALL
EFFECTIVE 10/18/10 AUTH
RELEASED DATE

Picklist Print

October 18, 2010 7:40:22 AM

Page 1

Work Order ID: 63010



Parent Item: D3980-1



Parent Item Name: 429 Bearpaw

Start Date: 10/18/10

Required Date: 10/18/10

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP Rev. A New Issue 2010/10/05 DL VERF:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M-ALXTRAB-S.300		Purchased	No			100	sf	429.1500	7.104	14.2794			



Alextra ET 0.300 sheet



Location

therm

Loc Qty

429.15

Loc Code

113108

429.15

Bid 10/15

DART AEROSPACE LTD	Work Order:	63011
Description:	Part Number:	D 3980-1
Inspection Dwg: D 3980-1 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST
THERMOFORMING SECTION

Description	Accept	Reject	Method of Inspection	Comments
Inside Radii less than "	✓			
Shape Definition	✓			
Texture Retention	✓			
Material imperfections such as bumps, cracks, voids, scratching	✓			

Measured by:	DL	Date:	10/10/18
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TRIMMING SECTION

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
23.72	Perf	23.75	✓			
26.65	Perf	26.75	✓	*		ACCEPTABLE 10.10.18
1.38	Perf	1.379	✓			
.375	Perf	.375	✓			
.210	min	.283	✓			
.175	min	.249	✓			
1.0	Perf	1.009				

Measured by:	BB	Date:	10/10/18
Audited by:	J	Date:	10/10/18
Preliminary Approval:		Date:	

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.14

Purchase Order Receipt Listing

Page 1 of 1

November 9, 2009 9:10:38 AM

All amounts are calculated in domestic currency.

All Vendors PO ID po10524 All Receipt Dates All Line Item Types

All Item ID/GL/WOs All Rec. Employees All Currencies

Grouped by Vendor ID

[illegible]

Receiving Report

Date: 9/11/06

Batch No: 7113108

Supplier: SABIC

Dart P/O: 10524

Packing Slip: Yes ☒ No ☐
 Invoice: Yes ☐ No ☒
 Receipt: Cash ☐ Cr ☒

Release Note Attached: Yes ☒ No ☐ N/A ☐
 Waybill Attached: Yes ☒ No ☐ N/A ☐
 Shipment Complete: Yes ☒ No ☐ N/A ☐
 QC6 Inspection ☒ N/A ☐
 Work Order 0214106 N/A ☒

Discrepancies

Part Number	Description	Quantity Ordered	Quantity Received	Quantity Returned	Quantity Short	Comments

Initials of receiver (If shipment OK) Level 12 [Signature]

Production/Admin: 9/11/06
 Date [Signature]
 Received/Costing [Signature]
 Initial [Signature]

Location _____

*** SHIPPER ***

A/C 14.46

SABIC Polymersshapes
1250 Old Innes Rd., Unit 519

Page: 1

Ottawa, Ontario K1B 5L3
PST 85637 2750 TR0001
PHONE: (613)745-7043 FAX: (613)745-4291

SOLD TO: DART AEROSPACE LTD

SHIP TO: DART AEROSPACE LTD

1270 ABERDEEN STREET
HAWKESBURY ON K6A 1K7
Canada

1270 ABERDEEN STREET
HAWKESBURY ON K6A 1K7
Canada
1-613-632-5200

Our Order No	Customer	GST License	PSY License	Invoice Terms	Ordered	Shipped	Taken By	RDD
088542	DARAR	CHARGE GST	6112-5207	NET 30 DAYS	05.10.09		caldwelli	27.10.09
Ship.Doc.No	Salesrep	Customer P.O.#	Shipped Via	F.O.B.	Freight Terms	Inv. No.	Ship Date	
01	93	10524	BPIC		PREPAID + CHARGE		26.10.09	

Ln#	Location	Ord	B/O	Ship Sku	Product Code	Description	U/Price

DELIVERIES TO BE DONE BEFORE							
4:00 PM , ADVISE SHIPPING CO.							

001 25 25 0 SHT 41200006

ALEXTRA BT3 - BLACK
.300 X 62 X 99

199/06

002 1 0 1 BA 0000005

THANK YOU FOR SELECTING
SABIC POLYMERSHAPES

Cor = Ray

LINE No.	RECEIVING No.	PICKED BY	DATE	SHIPPED BY	DATE	VERIFIED	DATE

NO GOODS TO BE RETURNED WITHOUT APPROVAL FROM SABIC. ALL DISCREPANCIES MUST BE REPORTED WITHIN 10 DAYS.
ALL RETURNS MUST HAVE VALID RETURNED GOODS AUTHORIZATION NUMBER CLEARLY MARKED ON ALL PACKAGES.

SABIC
Innovative
Plastics™

سابك
sabic

CERTIFICATE OF COMPLIANCE

SOLD TO: DART AEROSPACE

DATE: NOVEMBER 5th 2009

YOUR PURCHASE ORDER: 10524

OUR SHIPPER NO: 088542

SABIC POLYMERSHAPES LINE ITEM # 41200006

QUANTITY: 25 SHEETS

DESCRIPTION: ALEXTRA ET3 - BLACK
.300 X 62.00" X 99.00"

8
or 10/06

THESE PARTS WERE MANUFACTURED IN ACCORDANCE WITH: UL94HB

THIS IS TO CERTIFY THAT THE MATERIAL FINISHES AND FUNCTIONAL REQUIREMENTS OF THE ABOVE LISTED PARTS ARE IN ACCORDANCE WITH THE REFERENCE PROCUREMENT SPECIFICATIONS, CONTROL DRAWINGS OR PARTS DESIGNATION AND LATEST REVISIONS AS REFERENCED ON THE SUBJECT PURCHASE ORDER.

AUTHORIZED REPRESENTATIVE SIGNATURE



MIKE MCDONALD
INSIDE SALES REPRESENTATIVE

1250 Old Innes Road
Unit 519
Ottawa, Ontario
K1B 5L3

T: 613-745-7043
F: 613-745-4291
E: Michael.mcdonald@sabic-ip.com
www.sabic-ip.com



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PO REPRINT

Purchase Order ID **PO10524**

Purchase Order Date 10/05/09

PO Print Date 10/07/09

Page Number 1 of 1

Order From :

VC-GEP001

SABIC POLYMERSHAPES
9150 AIRPORT ROAD
BRAMPTON, ON L6S 6G1
CA

REVISED

FAXED
10/07/09

Contact Name
Vendor Phone 800 267 1575
Vendor Fax 613 745 4291
Vendor Account Nbr

Buyer Chantal Lavoie
Requisition Nbr
Tax Resale Nbr 10127-2607
Terms Net 30
Currency CAD
FOB

Ship To : DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req. Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
2	M-ALXTRAB-S.300	Alextra ET 0.300 sheet	10/29/09 Yes	✓ 1,065.61 sf	Epic collect	\$15.8308	\$16,869.48

Special Inst: MATERIAL: ALEXTRA
COLOR: BLACK
SIZE: 62" X 99" X 0.300"
1065.6112 SF = 25 SHEET

10/14/09

PO Total: \$16,869.48

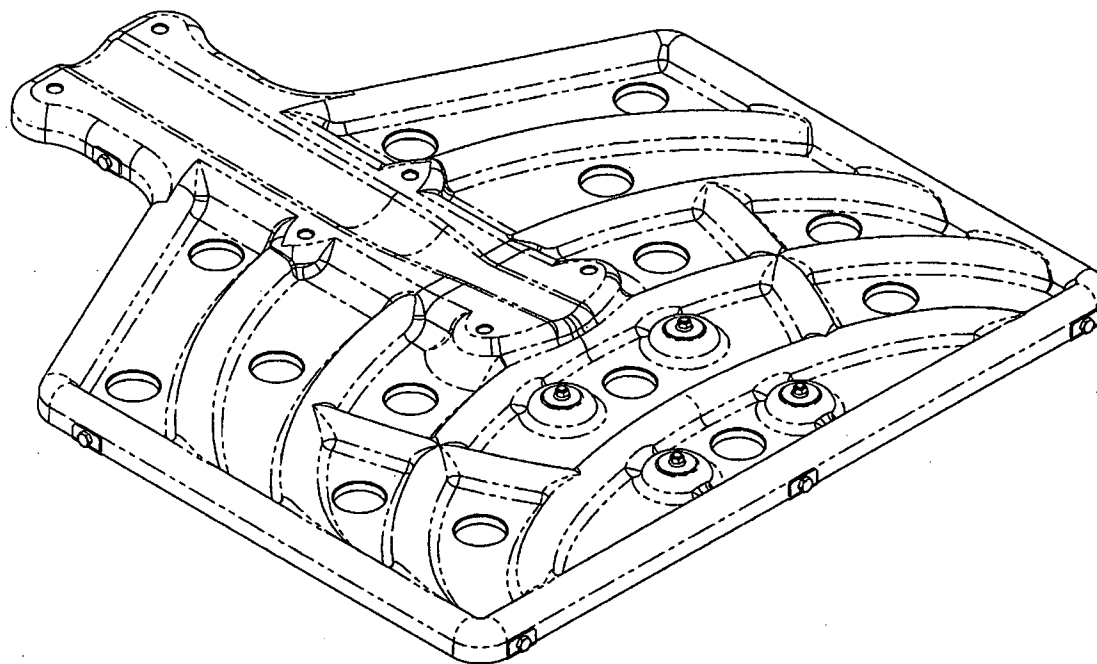
**MATERIAL CERTIFICATION
REQ'D UPON DELIVERY**

Change Nbr: 3

Change Date: 10/07/09

CL
u

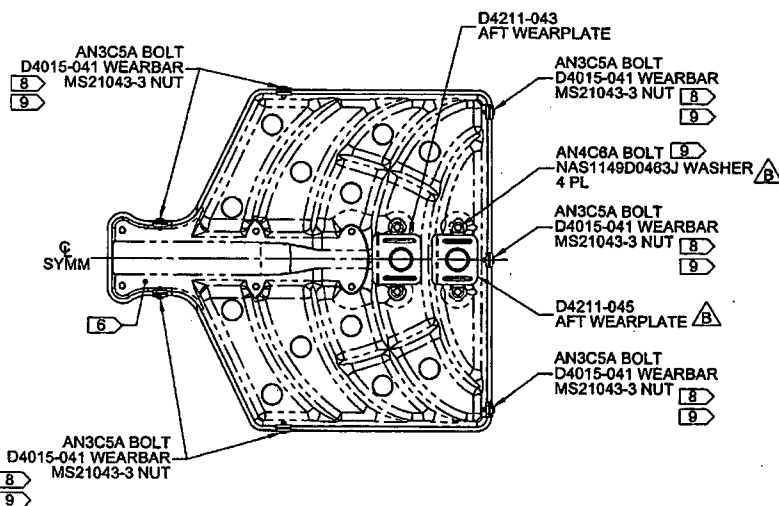
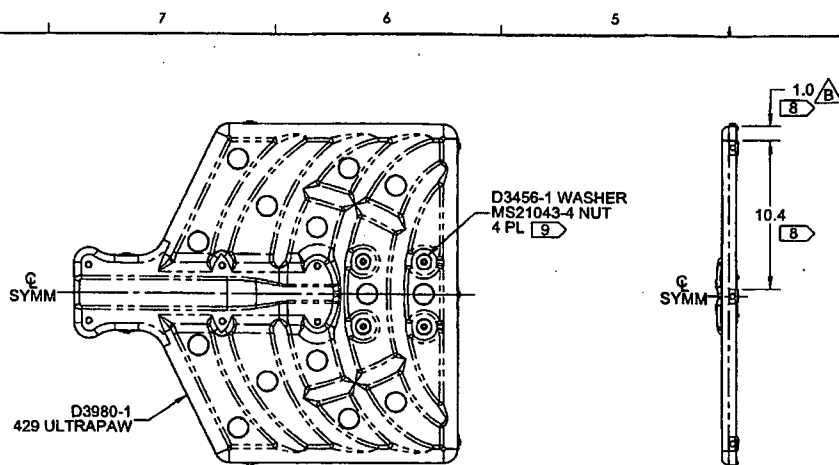
No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required when applicable



D3980-041 429 ULTRAPAW ASSY

RELEASED
2010-11-05
JMP

B	ULTRAPAW WAS BEARPAW: ADDED D4211-045 WEARPLATE (D4211-045 WAS SEPARATED INTO TWO - ZN A5-2 AND D3-2); REVISED NOTE 9 (A3-3) AND SHADED AREAS (D8-3) BASED ON TR-D429-793-1 REV. A; AN4CSA BOLT WERE AN4CSA BOLT (B5-2 AND D3-2); CORRECTED DIMS AS PER DRILLING JIG (WAS 14.9 (C8-2) AND 0.70 (D4-2)); ADDED RELIEF ON ULTRAPAW NOSE (A6-3, A7-3 AND A8-3).		MB	10.10.25
A	NEW ISSUE		MB	10.09.28
REV.	DESCRIPTION		BY	DATE
DESIGN	DRAWN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	MFG. APPR.		DRAWING NO.	REV. B
APPROVED	DE APPR.		D3980	SHEET 1 OF 3
DATE	10.10.25		TITLE	SCALE
			429 ULTRAPAW ASSY	NTS
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D3980-041 429 ULTRAPAW ASSY

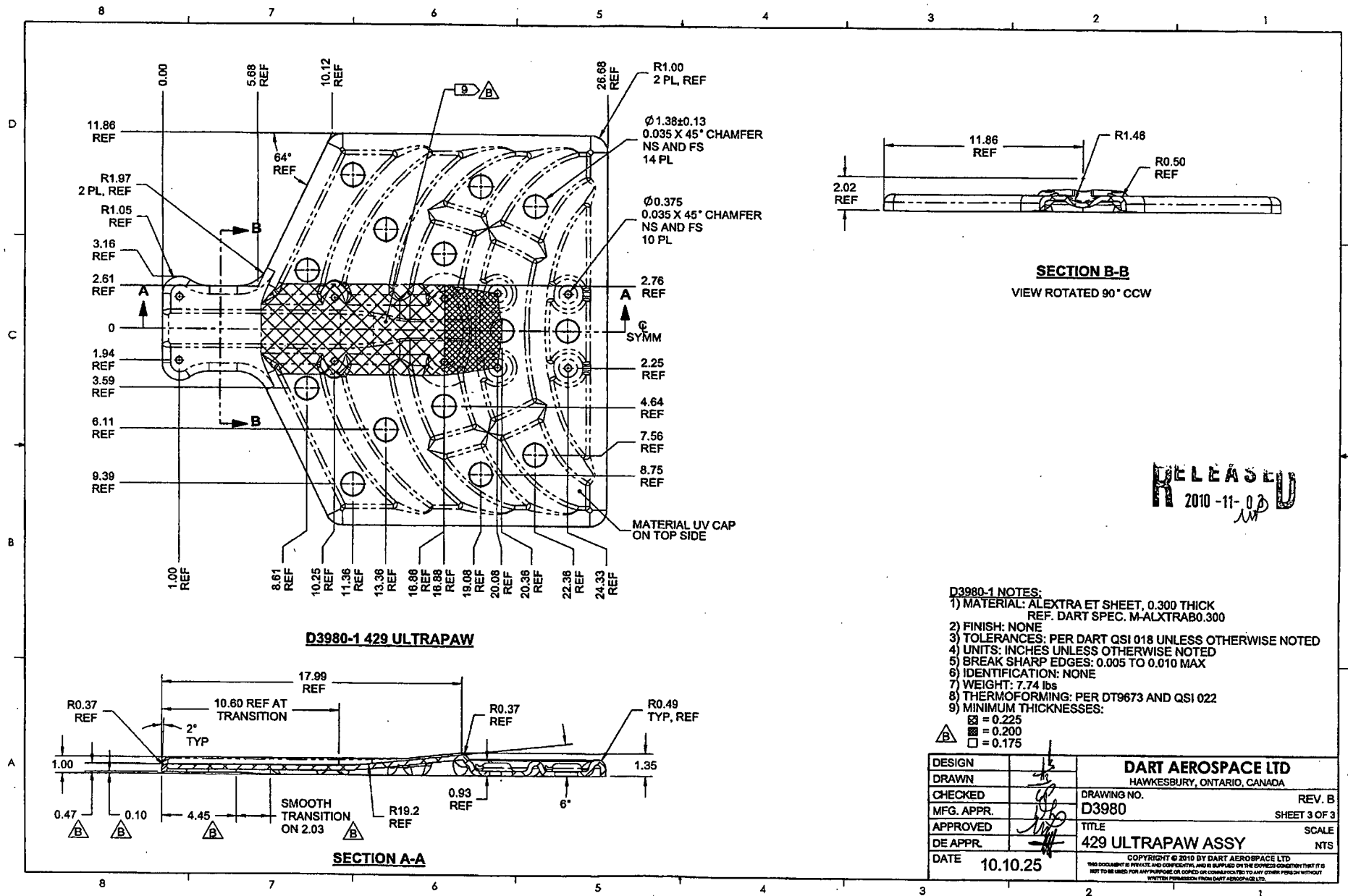
ITEM	QTY -041	P/N	DESCRIPTION
	X	D3980-041	429 ULTRAPAW ASSY
1	4	D3456-1	WASHER
2	1	D3980-1	429 ULTRAPAW
3	7	D4015-041	WEARBAR
4	1	D4211-043	AFT WEARPLATE
5	1	D4211-045	AFT WEARPLATE
6	7	AN3C5A	BOLT
7	4	AN4C6A	BOLT
8	4	MS21043-4	NUT
9	7	MS21043-3	NUT
10	4	NAS1149D0463J	WASHER

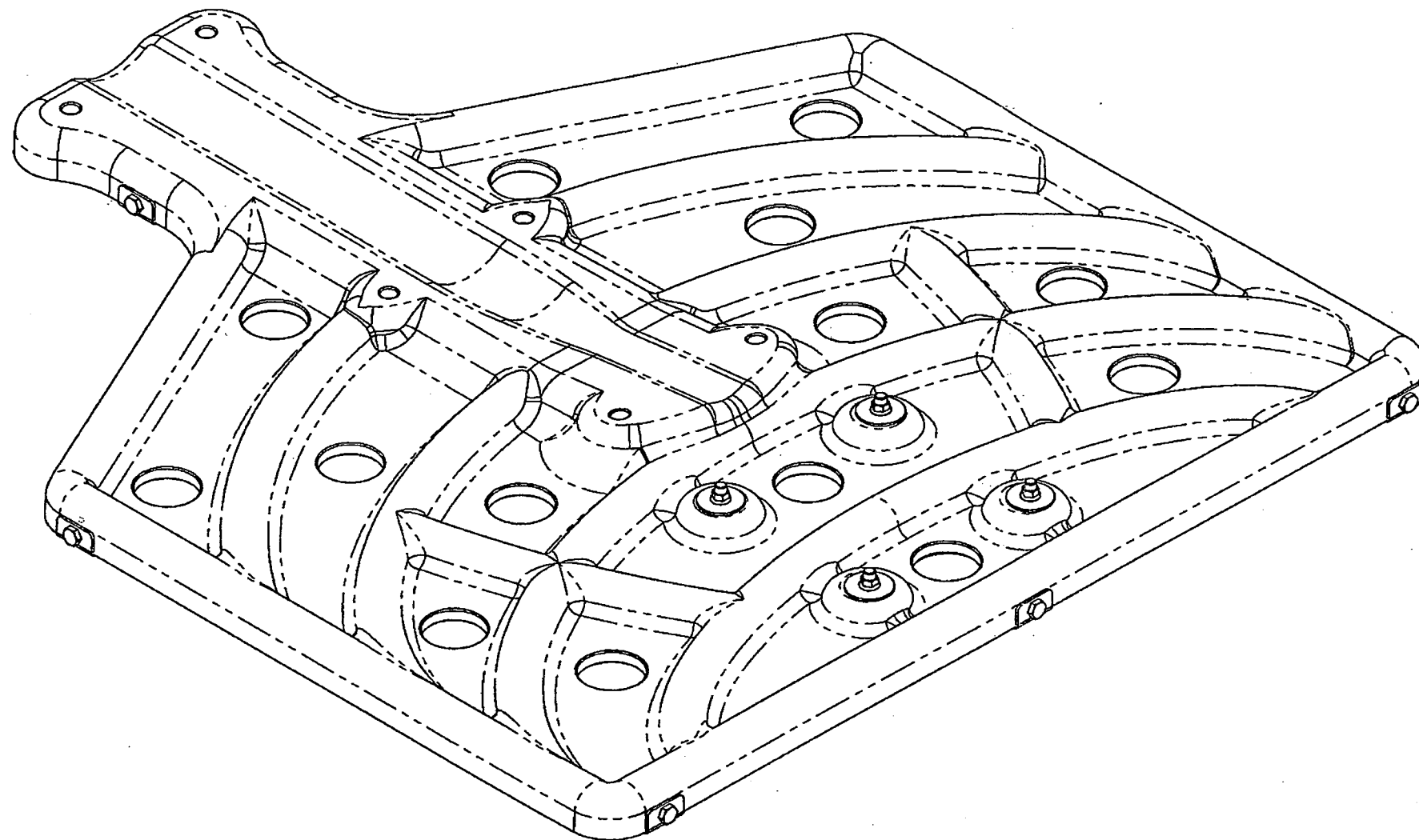
RELEASED
2010-11-03

D3980-041 NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3980-041" AND B/N "BXXXXX" PER QSI 044 8.4
- 7) WEIGHT: 8.53 lbs
- 8) LOCATE D4015-041 (ITEM 3) AS SHOWN AND TRANSFER DRILL Ø0.191 HOLE FROM D4015-041 TO D3980-1 ULTRAPAW AND FASTEN USING PRESCRIBED HARDWARE.
- 9) TORQUE:
AN3 NUTS = 15-20 in-lb
AN4 NUTS = 50-70 in-lb

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D3980	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		429 ULTRAPAW ASSY	NTS
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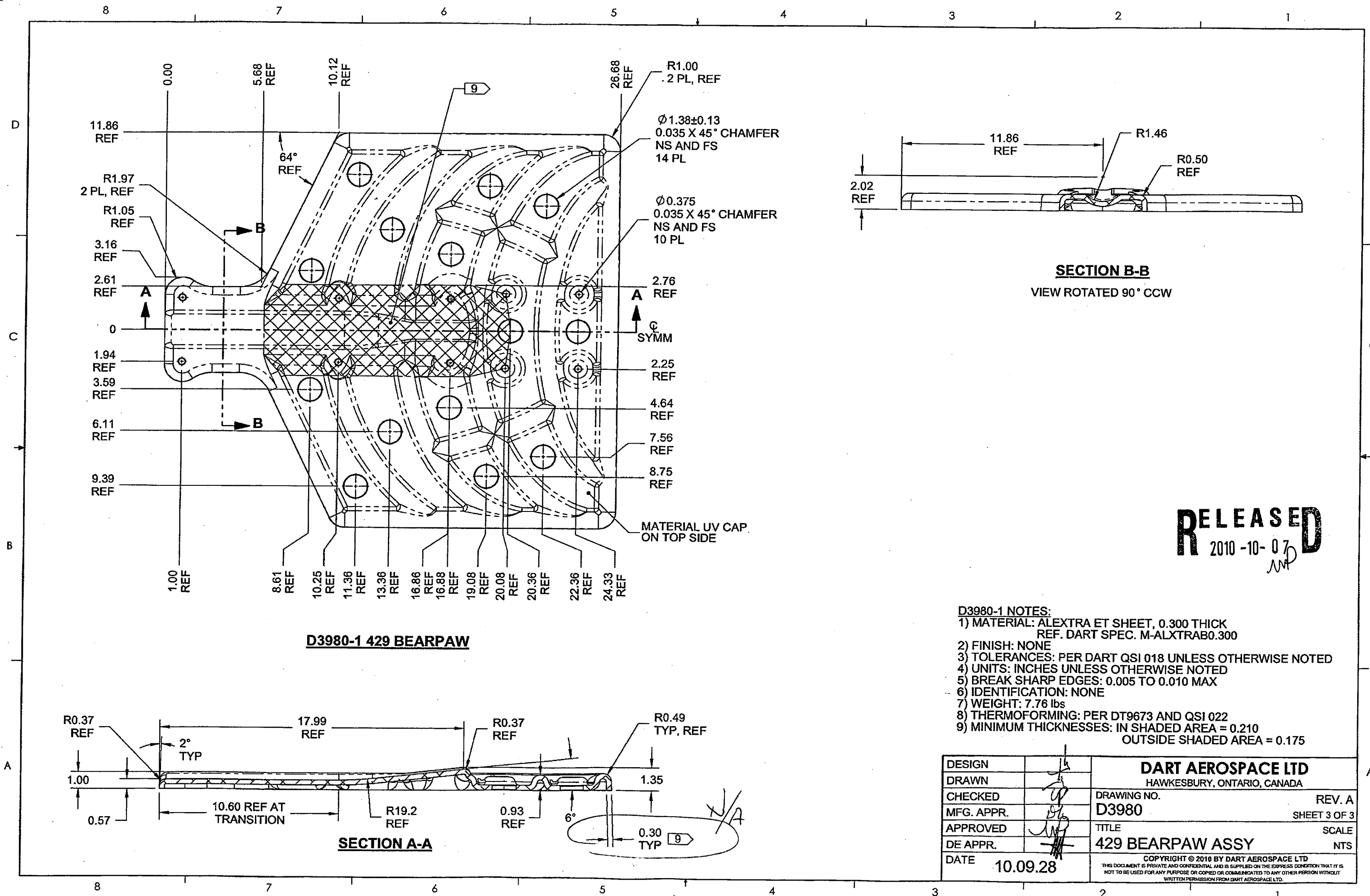




D3980-041 429 BEARPAW ASSY

RELEASED
2010-10-03
MB

A	NEW ISSUE	MB	10.09.28
REV.	DESCRIPTION	BY	DATE
DESIGN	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D3980 TITLE 429 BEARPAW ASSY	REV. A	
DRAWN		SHEET 1 OF 3	
CHECKED		SCALE	
MFG. APPR.		NTS	
APPROVED		DATE 10.09.28	
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D3980-1 429 BEARPAW

SECTION B-B
VIEW ROTATED 90° CCW

SECTION A-A

- D3980-1 NOTES:**
- 1) MATERIAL: ALEXTRA ET SHEET, 0.300 THICK
REF. DART SPEC. M-ALXTRAB0.300
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 7.76 lbs
 - 8) THERMOFORMING: PER DT9673 AND QSI 022
 - 9) MINIMUM THICKNESSES: IN SHADED AREA = 0.210
OUTSIDE SHADED AREA = 0.175

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D3980	SHEET 3 OF 3
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DE APPR.		429 BEARPAW ASSY	NTS
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